

## CLAIMS:

What is claimed is:

- 5 1. A vehicle passenger detection system for sensing a passenger in a passenger seating area, the system comprising:
- a passenger detection system; and
  - a moisture sensor connected with the passenger detection system;
- 10 wherein the passenger detection system is responsive to the moisture sensor in at least one way selected from the group of:
- (a) altering a measured value of the passenger detection system as a function of a moisture level; and
  - (b) selecting a table for the passenger detection system as a function of the moisture level.
- 15 2. The system of Claim 1 wherein the passenger detection system comprises a capacitive sensing system.
3. The system of Claim 1 wherein the passenger detection system comprises:
- 20 at least one electrode; and
- circuitry operable to detect a current in the at least one electrode.
4. The system of Claim 3 wherein the circuitry comprises a controller
- 25 operative to determine the characteristic of the passenger as a function of data from the at least one electrode.
5. The system of Claim 1 wherein the moisture sensor comprises two conductors connected by absorbent material.
- 30 6. The system of Claim 1 wherein the moisture sensor is positioned in a seat.

7. The system of Claim 6 wherein the passenger detection system comprises an electrode adjacent to the moisture sensor in the seat.

8. The system of Claim 5 further comprising circuitry to measure a resistance between the two conductors.

9. The system of Claim 1 further comprising a processor operable to determine a moisture level as a function of transmissions at different frequencies.

10. The system of Claim 1 wherein the at least one way comprises altering the measured value of the passenger detection system as function of the moisture level.

11. The system of Claim 1 wherein the at least one way comprises selecting the table for the passenger detection system as a function of the moisture level.

12. The system of Claim 1 further comprising:  
generating a fault condition of the passenger detection system in response to a signal from the moisture sensor.

13. The system of Claim 1 wherein the passenger detection system operatively connects with an air bag control system.

14. A vehicle passenger detection method for sensing a passenger in a passenger seating area, the method comprising the acts of:

(a) measuring a moisture; and

(b) determining a presence of the passenger in the passenger seating area;

wherein (b) is a function of the measured moisture, the function being at least one of:

(i) altering a measured value for (b) as a function of the measured moisture; and

(ii) selecting a table for (b) as a function of the measured moisture.

15. The method of Claim 14 wherein (b) comprises determining the presence

with a capacitive sensing system.

16. The method of Claim 14 wherein (b) comprises detecting a current in the at least one electrode.

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17. The method of Claim 16 further comprising:

(c) determining a characteristic of the passenger as a function of data from the at least one electrode.

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18. The method of Claim 14 wherein (a) comprises measuring a resistance.

19. The method of Claim 14 wherein (a) comprises measuring with a sensor positioned in a seat.

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20. The method of Claim 19 wherein (b) comprises determining in response to a signal in an electrode adjacent the sensor in the seat.

21. The method of Claim 14 wherein (a) comprises:

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(a1) applying first and second oscillating signals at first and second frequencies, respectively, and;

(a2) calculating a moisture level as a function of signal responsive to (a).

22. The method of Claim 14 wherein the function comprises altering the measured value as a function of the measured moisture.

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23. The method of claim 14 wherein the function comprises selecting the table as a function of the measured moisture.

24. The method of Claim 14 further comprising:

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(c) controlling an air bag system in response to (b).

25. The method of Claim 24 further comprising:

sending a fault signal where a moisture level exceeds a threshold.

26. The method of Claim 14 further comprising:

- (c) determining a grounded state of the passenger as a function of measurements  
5 at a first electrode while a second electrode is grounded and then floating; and
- (d) altering (b) as a function of the grounded state.

27. A vehicle passenger detection system for sensing a passenger in a passenger seating area, the system comprising:

- 10 a passenger detection system having circuitry and at least one electrode; and
- a moisture sensor connected with the circuitry;

wherein the passenger detection system is responsive to the moisture sensor, and the moisture sensor is separate from the at least one electrode and any other electrodes of the passenger detection system.

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28. A vehicle passenger detection system for sensing a passenger in a passenger seating area, the system comprising:

- a passenger detection system; and
- a moisture sensor connected with the passenger detection system;
- 20 wherein the passenger detection system is responsive to the moisture sensor by generating a fault condition of the passenger detection system.

29. A vehicle passenger detection method for sensing a passenger in a passenger seating area, the method comprising the acts of:

- 25 (a) measuring a moisture; and
- (b) determining a presence of the passenger in the passenger seating area;
- wherein (b) is a function of the measured moisture by generating a fault condition as a function of the measured moisture.